REMARKS

The Official Action objects to the form of the claims. The claims have been amended into a form more suited to U.S. practice and reconsideration and withdrawal of the objection are respectfully requested.

Claims 1, 3, 5, 7-17, and 20-21 were rejected as unpatentable over PHILLIPS 6,970,773 in view of MUNOZ SAIZ 6,109,567; and claims 18-19 were rejected further in view of MILLER et al. 6,764,047. The Examiner has withdrawn claims 2, 4, and 6 from consideration in the present application.

The Official Action notes that the Applicant had not provided evidence to support the assertion that one of skill in the art would not have found it obvious to optimize the flap shape and angle and location of the axis of rotation. In response, Applicant submits herewith a Declaration under 37 C.F.R. §1.132. Please make of record the Declaration under 37 C.F.R. §1.132 in the Appendix.

Claim 1 defines a lifting surface with a flap in which the inner surface (9) and the outer surface (10) of the flap have, beyond 25% of the flap chord CO, shapes that are not concave, in which the first trailing edge (8) of the flap has a main angle (α) included between 10° and 30°, in which the axis of rotation (4) of the flap is situated at a first distance (C1) from the first leading edge (7) that is between 15% and 35% of the chord (CO) of the flap (1), and in which the clearance (13)

between the flap leading edge and the trailing edge of the lifting surface is between 1.5% and 3.5% of the chord (CO) of the flap (1). The Official Action takes the position that one of skill in the art would find it obvious to optimize these dimensions since aeronautical engineers have for years modified the shape of airfoils to alter the lift and drag of airfoils and flaps.

The enclosed Declaration is evidence that one of skill in the art would not find it obvious to optimize the location of the axis of rotation and the clearance in the manner claimed to alter lift or drag. As explained in the Declaration, the present invention is mainly related to the reduction of a hinge moment of a flap (page 1, line 10 through page 2, line 8), and one of skill in the art tinkering with the shape of the airfoil or flap to alter the lift or drag would not be motivated to change both the location of the axis of rotation and the clearance between the flap leading edge and the trailing edge of the lifting surface as claimed because there is nothing in the art to suggest doing so. Those of skill in the art have learned that when maximizing lift it is result effective to introduce a large clearance (more than 3.5% of the chord) between the flap and the trailing edge of the lifting surface. An aeronautical engineer tinkering with the clearance to increase the lift would not be motivated to design a clearance between 1.5% and 3.5% of the chord because there is nothing in the art that suggests that making a clearance of this

size would be result effective to increase lift or reduce hinge moment.

Further, the Declaration is evidence that there is no suggestion in the references to optimize each of (a) the flap shape beyond 25% of the flap chord, and (b) the main angle of the trailing edge of the flap, and (c) the location of the axis of rotation of the flap, and (d) the clearance as claimed in claim 1. One of skill in the art would not find motivation in the references to modify all of these as claimed.

The Declaration also is evidence that the combination of these features produces an unexpected result; namely a greatly reduced hinge moment as explained in the specification. There is nothing in the references that would lead one of skill in the art to expect that the hinge moment would be reduced by combining these features in the manner claimed. An unexpected result provides patentability even to optimized variables that are known to be result effective. *In re Antonie*, 195 USPQ 6 (CCPA, 1977).

Dependent claims 11 and 13-15 further define these features and are allowable because there is no suggestion to optimize these features as claimed.

The other dependent claims are allowable for the reasons given above.

Accordingly, the claims avoid the rejections under §103.

Consideration of withdrawn claims 2, 4, and 6 is respectfully requested. These claims depend from claim 1 that is generic and believed to be in condition for allowance. The addition of the species of claims 2, 4, and 6 is understood to be reasonable within the scope of the present examination.

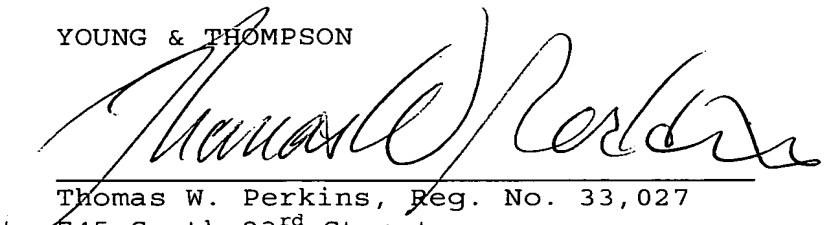
The Official Action repeats the assertion that the invention is drawn to a symmetrical airfoil having a symmetrical flap without addressing the Applicant's traversal. The application does not include the word "symmetrical" and the claims are not limited to symmetrical lifting surfaces or flaps. If the Examiner disagrees with the Applicant, it is respectfully requested that an explanation be provided. The statement in the Official Action regarding the symmetrical airfoil appears to be an improper characterization of the invention and withdrawal of this improper characterization is respectfully requested.

In view of the present amendment, the Declaration submitted herewith, and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



Thomas W. Perkins, Reg. No. 33,027
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

TWP/lrs

Appendix

- Declaration under 37 C.F.R. §1.132.